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**ORIGINAL RESEARCH:  
EMPIRICAL RESEARCH – QUANTITATIVE**

# The importance of contextual, relational and cognitive factors for novice nurses' emotional state and affective commitment to the profession. A multilevel study

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Email: y.ten.hoeve@umcg.nl**Funding information**

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**Abstract****Aim:** This study explored the effects of contextual, relational and cognitive factors derived from novice nurses' work experiences on emotions and affective commitment to the profession.**Background:** With an increasing demand for well-trained nurses, it is imperative to investigate which work-related factors most affect their commitment to develop effective strategies to improve work conditions, work satisfaction and emotional attachment.**Design:** A repeated measures within subjects design.**Methods:** From September 2013–September 2014 eighteen novice nurses described work-related experiences in unstructured diaries and scored their emotional state and affective commitment on a scale. The themes that emerged from the 18 diaries (with 580 diary entries) were quantified as contextual, relational and cognitive factors. Contextual factors refer to complexity of care and existential events; relational factors to experiences with patients, support from colleagues, supervisors and physicians; cognitive factors to nurses' perceived competence.**Results:** The first multilevel regression analysis, based on the 18 diaries with 580 entries, showed that complexity of care, lack of support and lack of competence were negatively related to novice nurses' affective commitment, whereas received support was positively related. The next multilevel regression analyses showed that all contextual, relational and cognitive factors were either related to negative or positive emotions.**Conclusion:** To retain novice nurses in the profession, it is important to provide support and feedback. This enables novice nurses to deal with the complexity of care and feelings of incompetence and to develop a professional commitment.**KEYWORDS**

affective commitment, care complexity, competence, emotional state, existential events, novice nurses, support, work experiences

## 1 | INTRODUCTION

Over the past decade, the concept of professional commitment and nurse retention has received considerable attention in the nursing

literature (Chang et al., 2015; Numminen, Leino-Kilpi, Isoaho, &amp; Meretoja, 2016; Spence Laschinger, Leiter, Day, &amp; Gilin, 2009). The increasing shortage of nurses is a major concern in most Western countries (Aiken, Clarke, Sloane, Sochalski, &amp; Silber, 2002; Robson &amp;

Robson, 2016; Sabanciogullari & Dogan, 2015) and is caused to a large extent by an ageing workforce approaching retirement and a decreased propensity among young people to choose a nursing career (De Cooman et al., 2008; Hasselhorn, Tackenberg, & Müller, 2003). For the next decade, a shortage of 60,000 nurses is expected in Canada, 43,000 in the United Kingdom and between 90,000 and 109,500 in Australia (Buchan, O'May, and Dussault (2013). In the Netherlands, the expected shortage is 125,000 in 2025. This shortage relates to the total Nursing and Caring sector, where approximately 425,000 professionals are employed (Government of the Netherlands; Ministry of Health, Welfare and Sport, 2017). Poor quality of the environment where nurses work is an important factor that contributes to the global challenge of recruiting new nurses into the profession (International Council of Nurses, 2006). Previous research showed that it is a great challenge for hospitals to recruit and retain adequately prepared nurses (Cameron, Armstrong-Strassen, Bergeron, & Out, 2004; Mooring, 2016). Professional commitment is considered as one of the most important factors to retain nurses in their profession (Gould & Fontenla, 2006; Parry, 2008; Teng, Lotus Shyu, & Chang, 2007).

Almost three decades ago, the conceptualization of organizational and professional commitment was extensively described by Allen and Meyer (Allen & Meyer, 1990; Meyer & Allen, 1991; Meyer, Allen, & Smith, 1993). Based on the identification of various approaches to the conceptualization and measurement of commitment, they proposed a three-component model of organizational commitment as a psychological state. The components in the model reflect: (a) a desire (affective commitment); (b) a need (continuance commitment) and (c) an obligation (normative commitment). Affective commitment reflects a sense of belonging, a desire to maintain membership in the organization or the profession. Continuance commitment refers to the need to remain due to the financial consequences of leaving and normative commitment refers to a moral obligation to stay (Meyer & Allen, 1991). Of the three components of commitment, affective commitment is most related to work experiences, as well as the degree of identification with the organization or the profession. Affective commitment develops as work experiences become more compatible with employees' feelings of competence and their need to feel comfortable in the profession, both physically and emotionally (Allen & Meyer, 1990; Meyer & Allen, 1991). With regard to nursing, previous research showed that nurses who are emotionally attached to the profession have stronger beliefs in the goals and values of the hospital and have higher levels of enjoyment of being a member of it (Nesje, 2017; Ruiller & Van Der Heijden, 2016). Nurses with high affective commitment experience greater work satisfaction and lower levels of work-related stress, are more devoted to their jobs and identify more closely with the profession (Karami, Farokhzadian, & Foroughameri, 2017; Lu, Chang, & Wu, 2007; Schmidt, 2007). From the perspective of the profession and the organization, Velickovic et al. (2014), underlined the essential role of affective commitment as the preferred type of relationship with employees. They found that affective commitment was

### Why is this review is needed?

- The retention of nurses is a global concern. Professional commitment is considered as one of the most important factors to retain nurses in their profession.
- Little knowledge exists of the contextual, relational and cognitive factors in novice nurses' work experiences or to what extent they are related to emotional state and affective commitment.
- These factors must be elicited to develop strategies to improve emotional attachment and affective commitment.

### What are the key findings?

- Several contextual, relational and cognitive factors, in particular complexity of care, support from colleagues, supervisors and physicians and perceived competence were significantly related to novice nurses' emotions and affective commitment.
- Experienced complexity of care enhanced the level of negative emotions and decreased the level of affective commitment and was not related to positive emotions.
- Emotionally charged experiences with patients were strongly related to both positive and negative emotions but had no direct effect on affective commitment.

### How should the findings be used to influence policy/practice/research/education?

- Supervising colleagues should be aware of the importance of work-related support and feedback to enhance positive emotions and the affective commitment of novice nurses.
- Novice nurses should be supported by their colleagues, supervisors and physicians when meeting complex and emotionally charged experiences in the clinical setting.
- Receiving support and feedback seem indispensable for novice nurses' development of professional commitment. Therefore, this condition should be met in the work environment to retain them in the profession.

predicted, *inter alia*, by positive professional identification and intrinsic job satisfaction.

Nursing not only requires skills and cognitive knowledge, but it also requires the ability to cope with high emotional demands (McVicar, 2003; Zheng, Lee, & Bloomer, 2016). Emotionally charged work experiences are often related to wellbeing, motivation and commitment (Bacon, 2017; Donoso, Demerouti, Garrosa Hernández, Moreno-Jiménez, & Carmona Cobo, 2015). A qualitative study conducted by De Almeida Vicente, Shadvar, and Lepage (2016), investigated work-related stressors among paediatric nurses. The

nurses in this study reported that job satisfaction and commitment were highly related to emotionally charged work experiences. Because affective commitment is most strongly related to nurses' work experiences, including their emotional state and their identification with the profession, we have decided to focus on these outcome variables in the current study, that is, positive and negative emotions and affective commitment to the profession.

## 1.1 | Background

In the Netherlands, as in most Western countries, the number of nurses who consider leaving the profession due to heavy workload and cognitive and physical exhaustion is growing fast (Central Agency for Statistics, in Dutch: Centraal Bureau voor de Statistiek, 2016). The increasing complexity of care and the associated high competence requirements turn out to lead to work stress, discontent and disaffection among nurses. Although loosely defined in the literature, following Guarinoni, Motta, Petricci, and Lancia (2014) and based on the daily experiences of nurses (in our earlier study, 2018), complexity of care is related to the concepts of difficulty, multifactorial influences, diversity, multiplicity (comorbidity), uncertainty and high demands on personal competences, skills and knowledge. Recent Dutch reports indicate that 50% of nurses working in hospital settings have considered quitting their jobs (FNV Zorg & Welzijn, 2016). Keeping well-trained and motivated nurses in the profession is not only a huge challenge but also a dire necessity. With an ageing patient population with high comorbidity and complex care demands, the need for good professionals will only increase. Therefore, it is inevitable that well-trained nurses be recruited and retained. This might be achieved by creating a work environment that leads to a high degree of commitment with their profession. In the literature on professions, professional commitment is not only described as being beneficial to employees, but also for the survival of a profession (Hughes, 1984). Existing knowledge suggests that emotionally charged work experiences have a major influence on novice nurses' commitment and, as a result, their intention to remain in the profession (Gardiner & Sheen, 2016; Thoresen, Kaplan, Barsky, Warren, & De Chermont, 2003).

Given the increasing demand for well-trained and well-prepared nurses, it is imperative to investigate what factors derived from daily experiences mostly affect their emotional state and affective commitment to the profession. Therefore, this study investigates the relationship between contextual, relational and cognitive factors and emotions or commitment. The factors are derived from intensively described work experiences in diaries. As far as we know, no study has examined, on a longitudinal basis, to what extent these factors derived from work experiences relate to emotions and affective commitment among novice nurses. These related factors must be elicited to develop effective strategies to improve nurses' working conditions, work satisfaction, emotional attachment and affective commitment. Figure 1 presents the theoretical framework for this study.

## 2 | THE STUDY

### 2.1 | Aim

The aim of the study was to investigate whether contextual, relational and cognitive factors derived from novice nurses' work experiences are related to positive and negative emotions and to affective commitment.

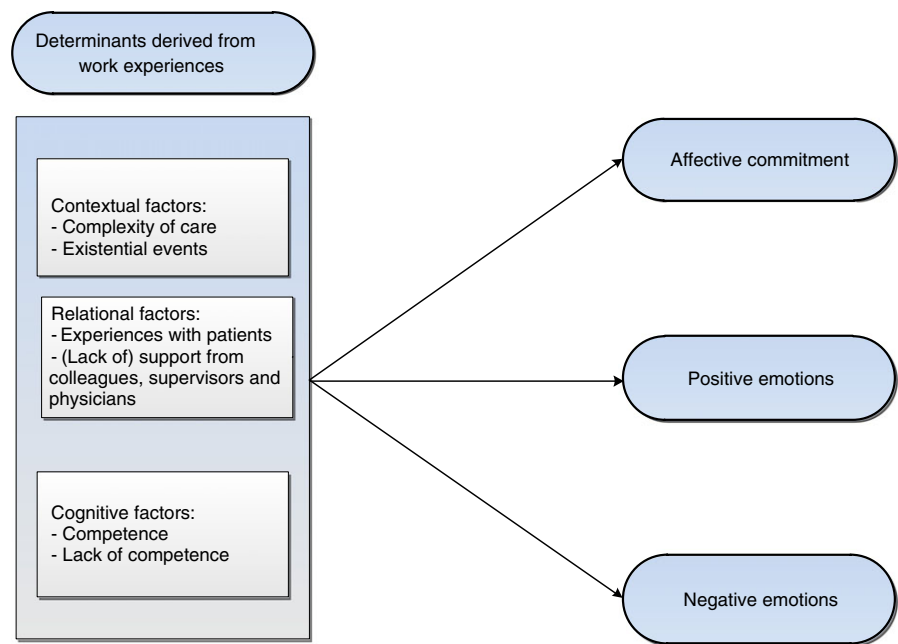
### 2.2 | Design

A repeated measures within subjects design was applied. More specifically, a multilevel design with repeated (diary) measurements nested in novice nurses.

### 2.3 | Participants and data collection

A convenience sample of novice nurses working at one University Medical Centre was recruited. The inclusion criteria were a Bachelor's degree in nursing, aged under 30 and with no more than 1 year's work experience.

In the Netherlands, novice nurses with two different educational levels are employed. We educate nurses on an intermediate vocational level and on a bachelor level. We focused only on nurses with a bachelor's degree to be able to compare the results without training bias. The same applies to the age criterion. Older nurses that re-enter the profession almost certainly have more experience than newly graduated young nurses. Participants were recruited in cooperation with the head of nursing at the inpatient departments. Twenty-four nurses met the inclusion criteria and they were invited in writing to participate in this study. Five nurses were not willing to participate for various reasons, such as being too preoccupied with their nursing specialization, examinations or personal reasons. The nurses who met the inclusion criteria and were willing to participate ( $N = 19$ ) were invited to a meeting where they were informed in detail about the purpose of the study and the associated workload. In the second month of the data collection one of the nurses dropped out for personal reasons. Using the Qualtrics package, data were collected from weekly measurements between September 2013 and September 2014. The nurses were asked to describe in their diaries a work-related experience which was really important to them. After completing the diaries, the nurses completed a short survey measuring emotional state, that is, whether they felt positive or negative emotions regarding the described experiences, respectively. Affective commitment to the profession was measured with three items, derived from the Repeated Exploration and Commitment Scale in the domain of Education (RECS-E; Van der Gaag & Kunnen, 2013), for example, "I stand by my choice for this profession". The Cronbach's alpha indicated good internal consistency of the scale ( $\alpha = 0.85$ ). Nurses responded on a scale from 1 ("not at all") - 6 ("very much").



**FIGURE 1** Hypothesized associations between work experiences on affective commitment and emotions [Colour figure can be viewed at [wileyonlinelibrary.com](http://wileyonlinelibrary.com)]

## 2.4 | Procedure

The diary entries ( $n = 580$ ) were thoroughly read by three researchers to obtain a contextual understanding of the described experiences. The data were inductively explored using content analysis to identify themes as they “emerged” from the data. The statements in each theme were read, discussed and compared critically. Subsequently, based on the themes and subthemes identified, the texts were deductively coded using the ATLAS.ti package. Three researchers independently coded the diaries, which were then compared to obtain inter-coder reliability and to avoid obtaining only the subjective judgements and interpretations of one researcher (Pope & Mays, 2008). Where there was disagreement, the “mismatches” were discussed and codes were renamed, merged or deleted. The themes that emerged from the diaries were relatedness, competence, autonomy, organizational context, existential events, development, goals and fit (Ten Hoeve et al., 2018). Subsequently, the codes were quantified, and frequencies were calculated. In the 18 diaries with 580 entries, a total of 1321 experiences were described and coded. Experiences about relatedness were most frequently described (28%), followed by competence (19%), development (13%), organizational context (11%), existential events (9%), goals (8%), autonomy (8%) and fit (4%). In the current study, we derived factors from the themes and explored the associations between contextual factors (complexity of care, existential events), relational factors (experiences with patients, support from colleagues, supervisors and physicians) and cognitive factors (competence) on emotions and affective commitment to the profession. These factors are similar to the themes and are derived from the most frequently described experiences in the diaries. The described experiences were both positive and negative and were also coded that way (e.g., presence or lack of competence). Table 1 provides the description of the themes.

## 2.5 | Trustworthiness

To guarantee the rigour and trustworthiness, this study adhered to the criteria proposed by Lincoln and Guba (1985). Data credibility was established by selecting an appropriate method for the data collection (unstructured diaries). Participants wrote their diaries in their own practice environment at a convenient moment. Besides, the researchers who explored and coded the diaries were familiar with the context of the nurses’ practice environment. Dependability was established by detailed data analysis and description. Conformability and consistency of the analysis were established by holding meetings to discuss preliminary findings, where emerging codes and themes were discussed until a consensus was reached. This procedure was maintained during the entire coding process of the diaries. To enhance the transferability of the findings, a description of the context, selection of participants, data collection and process of analysis is provided.

## 2.6 | Ethical considerations

Approval for the study was obtained from the Ethical Committee Psychology of the University. Oral and written information about the research was provided to the participants and they signed a consent form. Participants were informed that participation was voluntary and that they could withdraw from the study at any time without consequences.

## 2.7 | Data analysis

The dataset has a two-level structure: weekly measurements (at level 1) nested within individual nurses (at level 2). Because of the data structure with two levels, that is, repeated measurements nested in persons, multilevel analysis was conducted using MIWiN 2.33

**TABLE 1** Description of subthemes

Identified subtheme	Definition/description of subtheme
Contextual factors	
Complexity of care	Complexity of care is the perception of the nurse regarding the demands and responsibilities as a consequence of multifactorial influences, for example, multi-morbidity, more specialized medical treatments and technologies
Existential events	Existential events or experiences are direct confrontations with the illness, suffering and death of patients
Relational factors	
Positive experiences with patients	Positive nurse-patient relationships. For example, receiving compliments from their patients regarding their professional activities, having nice conversations with their patients
Negative experiences with patients	Negative nurse-patient relationships. For example, nurses feel disrespected by their patients, confrontation with aggressive behaviour and sexual harassment
Support from colleagues, supervisors and physicians	Receiving practical or emotional support from <i>colleagues</i> . For example, receiving support to deal with a heavy workload, receiving emotional support with existential experiences, feeling welcome in the team Feeling supported by <i>supervisors</i> regarding transcending issues, such as atmosphere in the ward, workload or career aspirations Positive nurse- <i>physician</i> relationships. For example, receiving compliments from a physician, experiencing good cooperation and problem-solving with physicians
Lack of support from colleagues, supervisors and physicians	Lack of support from <i>colleagues</i> , for example, disloyal behaviour, bullying, gossip Not feeling supported by <i>supervisors</i> regarding transcending issues, such as atmosphere in the ward, workload or career aspirations Negative nurse- <i>physician</i> relationships. For example, nurses feel ignored by physicians who refuse to come, insults, rude and arrogant behaviour
Cognitive factors	
Competence	Having the feeling that they acted correctly, that they possess the required competences
Lack of competence	Having the feeling of falling short and lacking the required competences

(Rasbash, Browne, Healy, Cameron, & Charlton, 2015). We conducted three multilevel regression analyses with respectively the dependent variables affective commitment, positive emotions and negative emotions. Based on observed data the regression coefficients, centred around the grand mean and the variance components at two levels are estimated with a maximum likelihood (ML) method. ML gives estimates that maximize the likelihood of finding the observed data given the model (Hox, 2010).

The multilevel analyses start with an intercept-only or random intercept model. This is a model without independent or explanatory variables. The total amount of variance (random effects) in the dependent variable are partitioned into the variance at level 1 (time) and the variance at level 2 (individuals), which is in the intercept-only model the unexplained error variance. In the next step, explained variables are added to the models. This means that the effects of contextual, relational and cognitive factors were tested on the three outcome variables with a stepwise procedure. Two models tested the two contextual factors, that is, complexity of care (model 1) and existential experiences (model 2) respectively. Finally, in model 3, relational (experiences with patients, support) and cognitive factors (competence) were added. The fixed effects refer to the parameter estimates and the random effects to the unexplained variance at the two levels. When the parameter estimates are at least twice as large as the corresponding standard errors, the calculated Z-value indicates that they are significant at  $p < 0.05$ . (Hox, 2010; Snijders & Bosker, 2012). The intraclass correlation coefficient represents how much variance is determined by individuals, relative to the total variance.

Whether the nested model fit significantly improved after adding the predictors was tested with a decrease in the deviance ( $-2$  residual log pseudo-likelihood), that is, chi-square test. The difference in deviance is the value of the test statistic with a chi-square distribution ( $\alpha = 0.05$ ) and differences in parameters matched the number of degrees of freedom (Hox, 2010; Snijders & Bosker, 2012).

### 3 | RESULTS

#### 3.1 | Descriptive statistics

The participants ( $N = 18$ ) were all female and ranged in age from 21 to 26 years (mean 23.1;  $SD = 1.4$ ). They differed with regard to preliminary training (fulltime or dual), clinical experience (0–12 months) and staffing position (staff nurse or float pool nurse). Table 2 shows all characteristics. The eighteen nurses completed 580 diaries (range per participant 19–50, mean per participant 35). This means 18 diaries with a total of 580 entries were quantified.

#### 3.2 | Commitment

Table 3 shows the results of the multilevel analysis with affective commitment as outcome variable. The random intercept model has an intercept of 4.623, indicating the average level of commitment expressed by the average nurse on average over time. The intraclass correlation coefficient (ICC) of this model is 0.44, reflecting that 44% of the variance is at the nurse level compared with the total

**TABLE 2** Participant characteristics (N = 18)

	% (N)	Mean (SD)
Gender female	100 (18)	
Age		23.06 (1.43)
Preliminary education		
Full time	61 (11)	
Dual	39 (7)	
Clinical experience		
1–12 months	56 (10)	
No experience	44 (8)	
Position		
Staff nurse	44 (8)	
Urology/plastic surgery	11 (2)	
Trauma surgery	11 (2)	
Paediatrics	5 (1)	
Internal medicine	5 (1)	
Surgery	5 (1)	
Ear, nose & throat	5 (1)	
Float pool nurse	56 (10)	
Central pool	40 (4)	
Pool paediatrics	40 (4)	
Pool internal diseases	20 (2)	

variance. This means that 44% of the total variance is accounted for by clustering at the nurse level and multilevel analysis is appropriate. In model 1, complexity of care is significantly negatively related to commitment and the model fit improves significantly ( $\chi^2(1) = 4.50$ ,  $p < 0.05$ ). In model 2, confrontations with existential events were not related to commitment and the model fit did not significantly improve. In the final model support from colleagues, supervisors and physicians was positively related to commitment, whereas complexity of care, lack of support and perceived lack of competence were negatively related to commitment. Experiences with patients did not affect commitment. Model 3 improved significantly ( $\chi^2(6) = 15.56$ ,  $p < 0.05$ ).

### 3.3 | Positive emotions

Table 4 shows the results of the multilevel analysis with positive emotions as outcome variable. The random intercept-only model has an intercept of 3.525. The ICC of this model is 0.095, which means that 9.5% of the variance is at the nurse level compared with the total variance. Model 2 compared with model 1 does significantly improve model fit ( $\chi^2(1) = 17.06$ ,  $p < 0.05$ ). Confrontation with existential experiences is negatively related to positive emotions. The final model compared with the second model improved significantly again ( $\chi^2(6) = 186.61$ ,  $p < 0.05$ ). The final model showed that positive experiences with patients, support from colleagues, supervisors,

**TABLE 3** Random intercept model of contextual, relational, and cognitive factors among novice nurses on affective commitment over time

	Model 0 B (SE)	Model 1 B (SE)	Model 2 B (SE)	Model 3 B (SE)
Fixed effects				
Intercept	4.623* (0.121)	4.634* (0.121)	4.632* (0.122)	4.646* (0.123)
Contextual factors				
Complexity of care		−0.270* (0.127)	−0.270* (0.127)	−0.275* (0.126)
Existential events			0.011 (0.066)	0.015 (0.067)
Relational factors				
Positive patient experience				0.031 (0.121)
Negative patient experience				−0.005 (0.086)
Support				0.104* (0.049)
Lack of support				−0.135* (0.066)
Cognitive factors				
Competence				0.019 (0.057)
Lack of competence				−0.206* (0.083)
Variance				
Measurement (level 1)	0.319 (0.019)	0.316 (0.019)	0.316 (0.019)	0.307 (0.018)
Nurses (level 2)	0.253 (0.088)	0.253 (0.088)	0.253 (0.088)	0.254 (0.088)
Model fit				
Deviance statistic ( $-2 \times \text{Log-likelihood}$ )	1039.139	1034.638*	1034.612	1019.050*
$\chi^2$ (df)		4.50*(1)	0.026(1)	15.56*(6)
Number of estimated parameters	3	4	5	11

Note. \* $p \leq 0.05$  (estimate/SE  $\geq 2.00$ ).



**TABLE 4** Random intercept model of contextual, relational, and cognitive factors among novice nurses on positive emotions over time

	Model 0 B (SE)	Model 1 B (SE)	Model 2 B (SE)	Model 3 B (SE)
Fixed effects				
Intercept	3.525* (0.136)	3.544* (0.139)	3.664* (0.140)	3.731* (0.113)
Contextual factors				
Complexity of care		−0.440 (0.346)	−0.431 (0.341)	−0.472 (0.292)
Existential events			−0.741* (0.178)	−1.055* (0.155)
Relational factors				
Positive patient experience				1.118* (0.282)
Negative patient experience				−1.572* (0.201)
Support				0.565* (0.115)
Lack of support				−1.453* (0.153)
Cognitive factors				
Competence				0.481* (0.133)
Lack of competence				−0.712* (0.193)
Variance				
Measurement (level 1)	2.409 (0.144)	2.400 (0.143)	2.331 (0.139)	1.704 (0.102)
Nurses (level 2)	0.253 (0.111)	0.262 (0.114)	0.256 (0.111)	0.127 (0.061)
Model fit				
Deviance statistic (−2 × Log-likelihood)	2182.199	2180.596*	2163.540	1976.935*
$\chi^2$ (df)		1.60 (1)	17.06*(1)	186.61* (6)
Number of estimated parameters	3	4	5	11

**TABLE 5** Random intercept model of contextual, relational, and cognitive factors among novice nurses on negative emotions over time

	Model 0 B (SE)	Model 1 B (SE)	Model 2 B (SE)	Model 3 B (SE)
Fixed effects				
Intercept	3.008* (0.095)	2.964* (0.098)	2.829* (0.094)	2.708* (0.073)
Contextual factors				
Complexity of care		1.058* (0.336)	1.033* (0.329)	1.073* (0.278)
Existential events			0.854* (0.171)	1.155* (0.146)
Relational factors				
Positive patient experience				−1.339* (0.268)
Negative patient experience				1.411* (0.190)
Support				−0.416* (0.108)
Lack of support				1.512* (0.147)
Cognitive factors				
Competence				−0.255* (0.125)
Lack of competence				(0.181)
Variance				
Measurement (level 1)	2.349 (0.140)	2.304 (0.137)	2.220 (0.132)	1.610 (0.096)
Nurses (level 2)	0.086 (0.054)	0.096 (0.057)	0.070 (0.047)	0.007 (0.019)
Model fit				
Deviance statistic (−2 × Log-likelihood)	2154.975	2145.209*	2121.096	1924.539*
$\chi^2$ (df)		9.77*(1)	24.11*(1)	196.56* (6)
Number of estimated parameters	3	4	5	11



physicians and perceived competence were positively related with positive emotions. Positive emotions were negatively influenced by confrontation with existential events, negative experiences with patients, lack of support from colleagues, supervisors and physicians and perceived lack of competence.

### 3.4 | Negative emotions

Table 5 shows the results of the multilevel analysis with negative emotions as outcome variable. The random intercept-only model has an intercept of 3.008. The ICC of this model is 0.035, which means that 3.5% of the variance is at the nurse level compared with the total variance. The model fit of all the models improved significantly. Complexity of care, confrontation with existential events, negative experiences with patients, perceived lack of support from colleagues, supervisors and physicians and perceived lack of competence were positively related to negative emotions. This means that these variables can enhance negative emotions. On the other hand, positive experiences with patients, perceived support from colleagues, supervisors and physicians and perceived competence were negatively related to negative emotions. This means that these variables can decrease the level of negative emotions.

### 3.5 | Model comparisons

Compared with the models of positive and negative emotions, experiences with patients and confrontation with existential events did not contribute to commitment, whereas the experiences with patients contributed to the level of positive and negative emotions. Complexity of care, lack of support from colleagues, supervisors and physicians and lack of perceived competence were negatively related to commitment, but also positively related to negative emotions. It seems that the "negative" factors (i.e., care complexity, lack of support, perceived lack of competence) were more related to the level of commitment than the "positive" factors (positive support). Complexity of care was not related to positive emotions.

## 4 | DISCUSSION

The findings of this study shed light on the impact of contextual, relational and cognitive factors derived from real-life experiences on novice nurses' emotional state and affective commitment to their profession. More specifically, this study explored to what extent within individuals, work commitment and emotions change over time as an effect of contextual, relational and cognitive factors derived from specific work experiences. These work-related experiences are accompanied by positive and negative emotions. The nature of the factors derived from the experiences that were tested in our models started with the organizational context, then focused on the relationships with patients and colleagues and finally the focus was more and more on nurses' own competences.

With regard to contextual factors, experiences related to complexity of care were negatively related to affective commitment and were positively related to negative emotions. When novice nurses start working in a hospital setting, they undergo a transitional phase from student nurse to being a practising professional. This process of transition is often accompanied by high demands on nurses and they have to deal with shorter patient stays and more specialized medical treatments and technologies. In their daily practice they are confronted with severely ill and complex patients whose care requires high-level decision-making skills. Complexity of care is the perception of nurses regarding the demands and responsibilities as a consequence of multifactorial influences, such as patients with comorbidity and multi-problematic status, geriatric syndromes, physical disability and diagnostic instability (Guarinoni et al., 2014). Nowadays, patients who are admitted to hospital often have multiple disorders, or a simple condition with difficult complications. The treatment of special or complex conditions requires a lot of knowledge and makes great demands on the novices' responsibilities as a nurse. Furthermore, unlike more experienced nurses, they cannot rely on routine. The findings of other studies with novice nurses indicated that they are involved in multiple demanding patient situations that put high demands on their critical clinical judgements (Bjerknes & Bjork, 2012; Dyess & O'Sherman, 2009; Wangenstein, Johansson, & Nordstrom, 2008). As a consequence, the increasing complexity of care turned out to result in higher work pressure, work stress, job dissatisfaction and decreasing commitment (Bakker, Le Bland, & Schaufeli, 2005). In our study, existential experiences such as confrontations with illness, death and suffering were related to emotions but did not contribute to novice nurses' affective commitment. Existential experiences were not only related to negative emotions, as could be expected, but also to positive emotions. This could prove that the belief that they could help and take care of severely ill and dying patients enhanced their self-confidence. Although this was not explored in this study, it is plausible that novice nurses benefited from these experiences and that they could learn from them. This is supported by Taubman-Ben Ari and Weintraub (2008) who found a positive correlation between caring for dying patients and a sense of self-esteem and meaning in life. The study by Donoso et al. (2015) also indicated that nurses' early confrontations with death and emotional demands had a positive influence on motivation and wellbeing (positive affect) among nurses.

Relational factors, such as support from colleagues, supervisors and physicians, or the lack of support, were significantly related to both positive and negative emotions and to the level of commitment. Perceived positive feedback and support contributed to positive emotions and affective commitment and were negatively related to negative emotions, while perceived negative feedback and lack of support were accompanied by negative emotions and were significantly and negatively related to positive emotions and commitment. When an individual nurse perceived more support, her level of commitment increased, indicating that commitment changes are positively related to changes in perceived support over time. These results are in line with previous studies (Cao et al., 2015; Chen,

Yang, Gao, Liu, & De Gieter, 2015; Ruiller & Van Der Heijden, 2016), which found that personal workplace support was strongly and positively related to nurses' affective commitment and that interpersonal exchanges in the daily work situation are crucial. The role of organizations and management and support of and trust among colleagues and supervisors, also proved to improve nurses' work satisfaction and organizational commitment (Hsu, Chiang, Chang, Huang, & Chen, 2015; Parker, Giles, Lantry, & McMillan, 2014). If the relationships with colleagues, supervisors and physicians are not based on trust and respect, it can be assumed that novice nurses will develop low levels of work enjoyment and self-confidence. Lack of support and hostility has also been documented as associated with work stress, job dissatisfaction and attrition (MacKusick & Minick, 2010; Young, Stuenkel, & Bawel-Brinkley, 2008). Moreover, good relationships with colleagues, supervisors and physicians have been shown to have more influence on novice nurses' affective commitment than relationships with their patients. Although emotionally charged relationships with patients turned out to be important issues that were significantly related to positive and negative emotions, they appeared to have no influence on affective commitment. As nurses, especially in hospital setting, provide care for patients who are suffering from severe and life-threatening illnesses, it is inevitable that nurse-patient relationships are permeated with emotions (Heffernan, Quin Griffin, McNulty, & Fitzpatrick, 2010). In contrast with our findings, the results of previous studies indicated that experiences with patients were not only related to emotions, but also to nurses' commitment or intention to leave the profession. The nurses in the study by Santos, Chambel, and Castanheira (2015) who perceived that they had a significant impact on their patients' lives and wellbeing, felt more committed to their profession. On the other hand, emotional distress and feelings of hopelessness seemed to reduce affective commitment and increase intentions to leave clinical practice (MacKusick & Minick, 2010).

Regarding cognitive factors, perceived competence and lack of competence, the results showed that novice nurses' experiences related to lack of competence were directly related to both positive and negative emotions and on affective commitment, whereas positive experiences with competences were only significantly related to emotions, not to commitment. Feelings of failure and lack of knowledge are likely to undermine work pleasure and self-esteem. Nurses must be competent and need to improve their competences constantly to provide the best possible care for their patients. Evidently, the nurses in our study felt that they were significantly lacking the necessary knowledge and skills required to provide good care. This lack of competence among novice nurses is often associated with being ill-prepared for clinical practice and being unable to link their theoretical knowledge to the real experiences in the clinical setting. This "theory-practice gap" is widely discussed in the literature (Bjerknes & Bjork, 2012; Duchscher & Cowin, 2004; Monaghan, 2015). Not being able to meet professional expectations is a plausible predictor for high levels of stress (Brown & Edelman, 2000; Ross & Clifford, 2002). Previous studies showed that perceptions of

competence are significantly associated with job satisfaction and professional commitment (Bratt & Felzer, 2011; Numminen, Leino-Kilpi, Isoaho, & Meretoja, 2015). It is obvious that novice nurses need to develop their competence by learning from clinical practice and by observing role models and receiving feedback. Informal workplace learning and professional support could help novice nurses to be better prepared for the clinical setting and to deal with complex care situations. Previous studies indicated that feedback, peer-to-peer intervention, being linked to a work supervisor and scheduled evaluation times are indispensable strategies to achieve this (Chang, Wang, Huang, & Wang, 2014; Parker et al., 2014). The finding of the study by Takase, Yamamoto, Sato, and Niitani (2015) showed that the self-reported competence of less experienced nurses was positively correlated to learning from others. This is in line with other studies that indicated that to enable novices to maintain and develop their competences, support from colleagues and supervisors is essential, also to keep them committed to the profession (Clark & Holmes, 2007; Marks-Maran et al., 2013).

#### 4.1 | Limitations

The longitudinal design and the number of measurement points ( $N = 580$ ) of real-life described daily experiences are strengths of the current study. The factors investigated in this research are not based on survey scales but emerged from the diaries kept by the novice nurses. Conducting the research in only one hospital and the number of participants ( $N = 18$ ) could be considered as a limitation. It would be interesting to replicate this study with a higher number of diaries (nurses) to explore the robustness of the findings.

### 5 | CONCLUSION

In summary, we can conclude that contextual, relational and cognitive factors derived from work experiences are highly related to novice nurses' affective commitment and emotional state. Negative work experiences, that is, complexity of care, lack of support and perceived lack of competence, reduced affective commitment more than positive experiences, that is, presence of support and perceived competence, increased the commitment. The level of commitment suffers the most from lack of support from colleagues, supervisors and physicians, perceived lack of competence and experiences characterized by complexity of care. Unexpectedly, experiences with patients, whether or not seriously ill or dying, did not appear to affect commitment, although they were significantly related to both positive and negative emotions. Complexity of care had a negative impact on affective commitment and enhanced negative emotions. The results of our study emphasize the significant importance of support and feedback to enable novice nurses to deal with the complexity of the work environment and to develop professional commitment. This can be achieved by providing individual guidance and paying more attention to novice nurses' wellbeing and satisfaction. Offering praise or, in passing, asking them

how they are doing, does not take much time. Apparently, this is valid for every profession, but nurses are extremely dependent on the unpredictability of the organizational context, such as unexpected admissions and a suddenly deteriorating health status of a patient (Sterner, Ramstrand, Nyström, Hagiwara, & Palmér, 2017). Therefore, these aspects are paramount in retaining novice nurses in the profession.

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## CONFLICT OF INTEREST

No conflict of interest has been declared by the authors.

## AUTHOR CONTRIBUTIONS

All authors have agreed on the final version and meet at least one of the following criteria [recommended by the ICMJE (<http://www.icmje.org/recommendations/>)]:

- substantial contributions to conception and design, acquisition of data, or analysis and interpretation of data;
- drafting the article or revising it critically for important intellectual content.

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